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Hurt Schroeder*

## 1999 NEC ADOPTED

The National Electrical Code, published by the National Fire Protection Association (NFPA), is revised and updated every three years in order to keep current with changing industry standards, practices, new materials and installation techniques. The 1999 edition of the NEC is the latest and most current edition and the most widely adopted set of electrical safety requirements in the world. Presently the City of Wichita is enforcing the 1996 edition.

The Board of Electrical Appeals reviewed the 1999 National Electrical Code with Office of Central Inspection staff at their February 9, March 9, April 13, and August 10, 1999, regular Board meetings, and unanimously recommended to City Council that the 1999 edition of the National Electrical Code be adopted (by reference) as the electrical wiring standard for the City of Wichita. Therefore, this current edition of the NEC was adopted by City Council in December of 1999.

There are numerous changes and revisions from the 1996 to the 1999 edition of the NEC. Many of the changes or revisions are minor and designed to clarify the intent of the code-making panels, or to make certain that rules conform with other related sections of the Code. However, other sections, revisions and articles are completely new and require persons engaged in electrical design, installation and other related areas to become familiar with the changes.

The 1999 NEC was adopted in its entirety by the City of Wichita, except for the following amendments:

- \* Updating Section 305-6(b), which pertains to GFCI protection at construction sites.
- \* Updating Section 311-11(a), which pertains to securing and supporting of wiring methods above a suspended ceiling.
- \* Updating Section 336-4, which pertains to uses permitted for Type NM and NMC cable.
- \* Updating Section 600.3, which pertains to listing of electric signs.
- \* Updating Section 680-8 (Exception #1), which pertains to overhead conductor clearances above swimming pools.
- \* Repeal Section 19.08.130 (Title 19), which pertains to the Surety Bond requirement for Electrical Contractors.
- \* Create a new section to Title 19, (Section 19.12.040) to amend section 230-40 of the 1999 NEC, which pertains to the number of service-entrance conductor sets that may be installed to buildings and structures.

Effective February 7, 2000, all electrical installations within the City of Wichita must conform to the new NEC requirements. Any building or electrical permits issued prior to the effective date (February 7, 2000) will be permitted to have the electrical wiring installed as per the 1996 NEC.

Wayne L. Bolen, Construction Inspection Supervisor - Electrical / Elevator



## Questions & Answers

**Q:** We would appreciate information on the background and intent of the last sentence of Section 1506.3 of the Uniform Building Code which states, "Overflow drains shall discharge to an approved location and shall not be connected to roof drain lines."

**A:** Section 1506.3 of the 1997 Edition of the Uniform Building Code intends that overflow drains be completely independent from roof drains. The section requires that roof drains be installed at the low points of the roof and that overflow drains with the inlet 2 inches above the low point of the roof be provided. The two drain systems should be completely independent of each other. The rationale for this is that in the event that the roof drain becomes clogged, the overflow drain on a completely independent system is available for the emergency.

Positive roof drainage is required for essentially two reasons:

- \* To prevent ponding of water and the consequent rapid deterioration of the roof-covering material, including potential for early failure of the roof covering.
- \* To prevent ponding and the resulting failure of the roof structure or, alternatively, the demand for increased strength of the roof structure to support ponding.

Although the UBC offers the alternative of structurally designing a roof to support any accumulation of water on roofs, water ponding is highly detrimental to the roof covering and, as a result, the roof must be designed with a positive drainage slope of 1/4 unit vertical to 12 units horizontal (2% slope). This drainage slope generally will provide positive drainage and will not permit water ponding.

Where the roof does not drain over the edge, the UBC requires roof drains to be provided at each low point of the roof. Clearly, the design of the roof drains should be such as to convey the water from the largest practical rainstorm tributary to the roof drain. Many areas, such as the Southwest, have infrequent rainfall, and it is quite probable that roof drains will become blocked due to an accumulation of leaves and other debris. For this reason the UBC requires that overflow drains be provided for each roof drain. The inlet flow line of the overflow drain must be located no more than 2 inches above the low point of the roof.

Where the roof drain is located adjacent to a parapet wall, the code provides that overflow scuppers in the adjacent parapet may be used, provided they have an area three times that required for the roof drain and the inlet flow line is located no more than 2 inches above the low point of the roof.

An alternate to the separate overflow scupper and roof drain is to provide in one scupper a combined overflow and drain. The opening is four times the required drain size - one time for the drain itself and three times for the required overflow with a minimum height of 4 inches. This provision has the advantage of creating fewer holes in the roof that are potential avenues of leaks. It is also of sufficient size to prevent the accumulation of trash and debris. For this type of provision, flashing must be carefully detailed and executed in the field to ensure that the flashing extends up the parapet above the highest probable waterline at the low point of the roof.

To secure the intent of the code, the UBC requires that overflow drains be connected to drain lines that are independent from the roof drains. If the two drains are connected to a common drain line, it becomes easily apparent that a blockage of the common drain line would affect both the roof drain and the overflow and would defeat the purpose of the overflow.

Except for Group R, Division 3 and Group U Occupancies, the code prohibits roof drainage water from a building to flow over public property. The intent is not necessarily preventing drainage water from flowing over "public property" in general, but rather preventing drainage water from flowing over a sidewalk or pedestrian walkway that is between the building and the public street or thoroughfare.

There are at least two problems that arise when roof drainage water is allowed to flow over a public sidewalk:

1. Under proper conditions of light and temperature, algae will form where water flows across the sidewalk and create a hazardous, slippery walking surface.
2. During heavy rainstorms, the velocity and force of the water emitting from the drain can create hazardous walking conditions for pedestrians.

Therefore, the usual procedure is to carry the roof drain lines inside the building through the wall of the building and under the sidewalk through a curb opening into the gutter. Section 1506.4 of the UBC states that: "Roof drains and overflow drains, where concealed within the construction of the building, shall be installed in accordance with the Plumbing Code."

*Jim Cranford, C.B.O., Building Codes Administrator*



## PLUMBING

The 1997 Uniform Plumbing Code, Section 420.0 requires that all shower valves must have "Handle position stops provided and shall be adjusted as per the manufacturers instructions to deliver a maximum mixed water setting of 120 Degrees Fahrenheit. The water heater thermostat shall not be considered suitable for meeting this provision." This not only applies to new construction, but also must be adhered to when replacing an existing shower valve. Existing, non-conforming valves may be repaired, but when replaced, they must conform to code.

There seems to be some confusion about **floor drains** and **trap primers**. The 1997 UPC requires the following:

**FLOOR DRAINS:** Section 412.2 Location of Floor Drains. Floor drains shall be installed in the following areas: \* Toilet rooms containing two (2) or more water closets or a combination of one (1) water closet and one (1) urinal, except in a dwelling unit. \* Commercial kitchens \* Laundry rooms in commercial buildings and common laundry facilities in multi-family dwelling buildings.

**TRAP PRIMERS:** Section 1007.0 Trap Seal Protection. Floor drains or similar traps directly connected to the drainage system and subject to infrequent use shall be provided with an approved automatic means of maintaining their water seals, except where not deemed necessary for safety or sanitation by the Administrative Authority. When automatic trap priming devices are installed, they shall be accessible for maintenance. (This has been enforced as written, since the adoption of the 97 UPC)

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**DRAIN LAYERS:** When scheduling your inspections, you are required to call between 7:30 a.m. and 8:30 a.m. and let the inspector know what time you expect to be done. This helps the inspector to adjust his schedule to be of better service to you. If you fail to properly call and schedule a time for the inspection, we will automatically assume that it is for the latter part of the day. We will try to accommodate you as much as possible, however, it is your responsibility to properly schedule inspection of your jobs with the inspector.

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### **MECHANICAL:**

Question: If we have a flue on a furnace that goes through an unconditioned attic space and it sweats, (condensation forms) may we insulate the flue to remedy the problem?

Answer: This is not a code issue, it is an engineering problem. We do not recommend insulating flues. This has been done in the past and has not proven to be a good practice nor has it solved the condensation problem.

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**ALL CONTRACTORS:** There has been some question about installing gas lines in a "free draw plenum area." Title 21.04.280 Section 1211.3 of the amendments states: "fuel-gas lines shall not be installed within conditioned air (supply), circulating air (return) or fresh air ducts and plenums of forced air systems."

The Board of Appeals of Plumbers and Gas Fitters concluded that the intent of the code, as written, was intended for ducted plenums, not free draw areas where the ceiling is open to habitable space. Ken Englert made the motion, seconded by Pat Johnson and the motion carried that "free draw area" does not apply to this section of the ordinance.

Dan Leidy, Construction Inspection Supervisor, Plumbing / Mechanical

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## **Electrical Permit Fee Increases**

Effective February 7, 2000, the minimum itemized electrical permit will be increased from \$18.00 to \$25.00. Due to increasing operating costs, it is necessary to periodically increase this itemized electrical permit fee table included in Title 19. No adjustments have been made to this table since 1992. The fee table is based on the number and types of electrical items installed at a given location by an electrical contractor. The electrical contractor obtains the permit application, fills in the required information, and purchases the electrical permit prior to the work being performed. The new electrical permit forms reflecting the change are available in our office.

Wayne L. Bolen, Construction Inspection Supervisor, Electrical / Elevator

## Holidays & Inspections

The Office of Central Inspection will be closed on the following holidays: Presidents Day-February 21, Memorial Day-May 29, Independence Day-July 4, Labor Day-September 4, Veterans Day-November 10, Thanksgiving-November 23 & 24 and Christmas Day-December 25.

If a contractor finds that an inspection is necessary when OCI is closed, the contractor can make arrangements for inspection on holidays or other times outside of OCI's normal hours. To arrange such an inspection the contractor must contact OCI prior to 3:00 p.m. on / or preferably before the last working day prior to the holiday or weekend. There is a \$60 fee for each inspection and all fees must be paid in advance.

In lieu of the above method for obtaining inspections outside of OCI's normal hours, OCI will also accept letters of inspection from third party architects or structural engineers and recognized staff of engineering testing labs. The letters must attest that the construction was in conformance with the OCI approved plans or the Uniform Building Code on those jobs that are not required to have approved plans. OCI will also accept proof of compliance letters from approved OCI third party inspectors for residential concrete inspections. A list of the approved third party inspectors is available in the Office of Central Inspection.

All final and temporary final inspections for occupancy must be performed by OCI inspectors.

*Ray Sledge, Construction Inspection Supervisor, Building Section*



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